

## CLAIMS

1. A wireless digital communication system comprising:
  - broadcast interface means for encoding message information on the vertical blanking interval (VBI) of a video signal, said message information being encoded to the VBI format so as to form a pre-formatted signal;
  - broadcast means for transmitting an out-going signal, said out-going signal having said pre-formatted signal being modulated and embedded in the VBI of said video signal, said pre-formatted signal being received from said broadcast interface means and being transmitted on a carrier of said out-going signal;
  - at least one transceiver means for receiving said out-going signal and for transmitting a return signal on said carrier of said out-going signal, said transceiver means having means for detecting clock information relating to the synchronization or timing of said broadcast means, said transceiver means further including:
    - decoding means for identifying said pre-formatted signal from said out-going signal and for decoding said message information;
    - output means for outputting said message information to a display means;
    - input means for inputting return message information;
    - encoding means for encoding said return message information; and
    - modulating means for inserting said return signal on the out-going signal of the broadcast means,
  - antenna means for detecting said return signal,
  - return signal processor (RSP) means for detecting said return signal from said carrier of the out-going signal of the broadcast means,

message processor (MESP) means for decoding of said return signal having said return signal message information, said MESP means adapted to transmit said return signal message information to a communications network.

5        2.      The wireless digital communications system of claim 1 whereby said transceiver is fixed in its geographic location.

10        3.      The wireless digital communications system of claim 1 whereby said transceiver is a mobile unit.

10        4.      The wireless digital communications system of claim 1 whereby said transceiver means includes a VBI antenna.

5. The wireless digital communications system of claim 1 whereby said transceiver means includes a VBI/Broadband PCS composite antenna for detecting said pre-formatted signal on said out-going signal and for transmitting said return signal on said out-going signal.

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6. The wireless digital communications system of claim 1 whereby said decoding means further detects synchronization bits of said pre-formatted signal and setting an internal clock of said transceiver means, said internal clock of said transceiver means being used for transmitting said return signal.

7. An enhanced PCS wireless digital communication system, comprising:
- broadcast interface means for encoding message information on the vertical blanking interval (VBI) of a video signal, said message information being encoded to the VBI format so as to form a pre-formatted signal;
- 5 broadcast means for transmitting an out-going video signal having said pre-formatted signal embedded on the VBI of said video signal, said pre-formatted signal being received from said broadcast interface means and inserted in a carrier of said video signal;
- 10 a transceiver means for receiving said out-going video signal and for transmitting a return signal on the VBI of said carrier of said video signal, said transceiver means having means for detecting clock information relating to the synchronization or timing of the broadcast means, said transceiver means further including:
- 15 decoding means for identifying said pre-formatted signal from said out-going video signal and for decoding said message information;
- output means for outputting said message information to a display means; and
- input means for inputting return message information;
- encoding means for encoding said return message information for preparation for insertion on a return signal for insertion on the out-going signal of the broadcast means;
- antenna means for detecting said return signal;
- 20 return signal processor (RSP) means for detecting said return signal from said carrier of said out-going signal of the broadcast means,

message processor (MESP) means for decoding of said return signal having said return signal message information, and for transmitting said return signal message information to a switch.

5        8.      The enhanced PCS wireless digital communications system of claim 7  
whereby said transceiver is fixed in its geographic location.

10       9.      The enhanced PCS wireless digital communications system of claim 7  
whereby said transceiver is a mobile unit.

10       10.     The enhanced PCS wireless digital communications system of claim 7  
whereby said transceiver means includes a VBI antenna.

11. The enhanced PCS wireless digital communications system of claim 10 whereby said transceiver means includes a VBI/Broadband PCS composite antenna for detecting said pre-formatted signal on said out-signal and for transmitting said return signal on said transmitted video signal a wave-riding VBI message.

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12. The enhanced PCS wireless digital communications system of claim 11 whereby said decoding means further detecting a synchronization bit of said pre-formatted signal and setting an internal clock of said transceiver means, said internal clock of said transceiver means being used for transmitting a return signal on the VBI  
10 carrier.

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